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EXAMINER

TON, ANABEL

ART UNIT PAPER NUMBER

2875

DATE MAILED: 09/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/845,073

Applicant(s)

LUK, JOHN F.

Examiner

Anabel M Ton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-115 is/are pending in the application.
- 4a) Of the above claim(s) 42-58 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 59-115 is/are allowed.
- 6) ☒ Claim(s) 1-3, 10, 11, 31-33, 36 and 37 is/are rejected.
- 7) ☒ Claim(s) 4-9, 12-30, 34, 35 and 38-41 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3,10,11 and 31,36,37 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson II (5,580,163).

3. Johnson II discloses frame means for supporting a plurality of light emitting diodes, means for mounting each diode of said plurality of diodes to said frame means and simultaneously for positioning said plurality of diodes wherein each discrete diode light beam is directed to a prescribed focal point (target zone) and thereupon directed to a predetermined illumination area, and circuit hoard means structurally associated with said frame means for transmitting and controlling electrical voltage to said plurality of light emitting diodes (Fig 3, col. 4 lines 14-50).

- Said frame means includes a mounting template, and said means for mounting includes said mounting template forming a plurality of individually positioned mounting steps wherein each said diode of said plurality of diodes is positioned at one mounting step of said plurality of mounting steps wherein each said discrete diode light beam is independently directed to said focal point (Fig 3, col.

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4 lines 14-50.); said mounting template is configured substantially as a planar surface, said plurality of diodes being positioned and arranged at said mounting steps so as assume the configuration of said planar surface (figs 2 and 6); said mounting template being positioned in said nonconductive housing.

- Said light emitting diodes are white light emitting diodes.
- Means for securing said plurality of diodes to said mounting template, said means for securing being wherein each said diode is removably mounted to each of said mounting steps.
- each said diode is removably glued to each of said mounting steps.
- Said mounting template is configured so as to define a hollow volume having an interior volume surface and a closed plane aperture having a periphery, said plurality of diodes being positioned and arranged at said mounting steps so as to assume the configuration of said interior volume surface, said diode light beams emitting from said diodes being directed through said closed plane aperture.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson II.

6. With regards to the light emitting diodes being colored light emitting diodes specifically selected from the group consisting of red, green, and blue light emitting diodes and group consisting of cyan, yellow and magenta light emitting diodes, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have such colored LED's for a lighting device since the use of colored LED's for a light device for the purpose of emitting a desired light color is old and well known in the art.

***Allowable Subject Matter***

7. Claims 59-115 are allowed.

8. Claims 4-9, 12-30, 34, 35, 38-41 and 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: The prior art cited does not recite the following limitations.

- A lighting system for stage, theatrical and architectural lighting, comprising a sandwich frame for supporting a plurality of light emitting diodes, said sandwich frame including a positive electrically conductive layer and a negative electrically conductive layer interposed between layers of biasable insulating foam, said **sandwich frame defining a hollow volume having an interior volume surface and a closed plane aperture having a circular periphery, said**

**plurality of diodes being positioned within said interior volume in association with said interior volume surface, diode light beams emitting from said plurality of diodes being directed through said closed plane aperture, means for mounting each diode of said plurality of diodes to :said frame and simultaneously for positioning said plurality of diodes wherein each discrete diode light beam is directed to a prescribed focal point (target zone) and thereupon directed to a predetermined illumination area, said means for mounting including at least one pin removably positioned in said at least one pin including layers of foam, said at least one pin including positive and negative electrical leads in electrical contact with said positive and negative conductive layers, said biasable foam having an elasticity threshold at least equal to the maximum pressure exerted by said at least one pin; and electrical power for transmitting and controlling electrical voltage to said positive and negative conductive layers and to said plurality of light emitting, diodes.**

- A lighting system for stage, theatrical and architectural lighting, comprising a sandwich frame for supporting a plurality of light emitting diodes, said **sandwich frame including a positive electrically conductive layer and a negative electrically conductive layer interposed between layers of biasable insulating foam**, said sandwich frame having a surface, said plurality of diodes being positioned at said surface, means for mounting each diode of said plurality of diodes to said frame at said surface and simultaneously for positioning said

plurality of diodes wherein each discrete diode light beam is directed to a prescribed remote focal point (target zone) and thereupon directed to a predetermined illumination area, said means for mounting including at least one pin removably positioned in said layers of foam, said at least one pin including positive and negative electrical leads in electrical contact with said positive and negative conductive layers, **said biasable foam having an elasticity threshold at least equal to the maximum pressure exerted by said at least one pin; and electrical power for transmitting and controlling electrical voltage to said positive and negative conductive layers and to said plurality of light emitting diodes.**

- said hollow volume is configured as a hollow cone wherein said closed plane aperture configured as a cone closed plane aperture defined by a cone periphery, and said interior volume surface is a cone inner volume surface defined between the vertex of said cone and said cone periphery.
- Said circuit board means is a unitary rigid circuit board and frame including a plurality of diode electrical connectors, and said means for mounting includes said plurality of diodes having a plurality of diode electrical leads connected to said plurality of diode electrical connectors, and said means for mounting includes said plurality of electrical leads being individually positioned and angled wherein said plurality of diodes are positioned and arranged wherein each said discrete diode light beam is independently directed to said focal point.

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- An imaging gate defining a gate aperture positioned at a distance from said frame means;
- A gobo operatively mounted with said imaging gate.
- A shutter blade operatively mounted with said imaging gate.
- Focusing lens means for intercepting said plurality of diode discrete diode light beams and directing said plurality of diode light beams as a focused total diode light beam to said illumination area, said focusing lens means being positioned between said imaging gate and said illumination area.
- Collimating lens means spaced from said imaging gate, said focusing lens means being spaced from said collimating lens means, said collimating lens means being for collecting said plurality of diode discrete light beams emitted by said plurality of diodes being supported by said frame means and directing a collimated diode total light beam to said focusing lens, said focusing lens being for collecting said collimated diode total light beam and directing a focused diode total light beam to said illumination area.
- Plurality of diodes are cylindrical in configuration and wherein said frame means includes a mounting template and said means for mounting includes said mounting template forming a plurality of individually positioned cylindrical recesses wherein each said diode of said plurality of diodes is positioned within one of said plurality of cylindrical recesses wherein each said discrete diode light beam is independently directed to said focal point.



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anabel M Ton whose telephone number is (703) 305-1084. The examiner can normally be reached on 08:00-16:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703) 305-4939. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Anabel M Ton  
Examiner  
Art Unit 2875

AMT

  
Thomas M. Smith  
Primary Examiner